Prevalence and Incidence of Acute Myeloid Leukemia May Be Higher Than Currently Accepted Estimates Among the ≥65-Year-Old Population in the United States

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INTRODUCTION

• The Surveillance, Epidemiology and End Results (SEER) Program is one of the largest nationwide sources of information on cancer incidence and statistics.

• The 2011 SEER incidence estimate for acute myeloid leukemia (AML) was 17.5 per 100,000 (9.7-26.7) among the ≥65-year-old population; 8 per 100,000 (4.8-12.6) for those <65 years old. However, recent studies suggest this registry may underreport cancer rates due to reasons including sequencing of diagnoses and incomplete treatment reporting requirements,

• For example:

• Using a novel claims-based algorithm, the SEER-Medicare database (2002-2008) estimated the annual incidence of AML to be 27.5 per 100,000 (95% CI: 25.1, 29.0) for ≥65-year-olds and approximated with 20 per 100,000 reported by SEER using the same sample.

• Another study using a Medicare claims-based algorithm found that SEER (1999-2005) may have underestimated as many as 50% of AML, and of AML claims.

OBJECTIVES

• To estimate gender and age-specific AML prevalence and incidence estimates among the 2012 US Medicare fee-for-service (FFS) population using a Medicare claims-based algorithm and to compare these results to published SEER data.

METHODS

• We conducted a retrospective claims analysis using 2012 Centers for Medicare and Medicaid Services (CMS) data including an equivalent institutional (100%), equivalent institutional (100%), and a random non-equivalent (43%) sample of the Medicare Part A & B (Medicare FFS) beneficiaries.

• To identify patients with AML diagnoses and treatments, we used ICD-9 codes and codes for international classification of disease, 9th edition.

• Key metrics for each database included the following:

- Surveillance, Epidemiology and End Results Program (SEER).
- Medicare database.
- The SEER database was estimated from 2011-2011.

Eligible Patients

• Both AML diagnoses and treatments were used to identify AML patients within CMS claims data. AML diagnoses were identified using ICD-9 codes (205.0, 205.00, 205.01, 205.02). AML treatments were identified using J Codes and codes for CPT procedures and infusions (ICD-9); treatment dates were the total number of prevalent minus incident AML patients.

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Figure 1. Medicare FFS AML Populations

Table 1. One-Year AML Prevalence Rates (Medicare FFS 2012)

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<thead>
<tr>
<th>Population</th>
<th>AML Prevalence</th>
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<tr>
<td>All Medicare FFS patients</td>
<td>4.04%</td>
<td>3,046,566</td>
<td>525 6.5</td>
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Incidence Estimates for Newly Diagnosed AML Patients

• The overall Medicare FFS rate was 26.5 per 100,000 (95% CI: 25.1, 28.0).

• Incidence estimates by age and gender are summarized in Table 2.

Table 2. One-Year Incidence Estimates for Newly Diagnosed AML Patients (Medicare FFS 2012)

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CONCLUSIONS

• The AML incidence estimate for the ≥65 year Medicare FFS cohort is substantially higher than the incidence estimate reported by SEER.

• The RR=1.86 in the Medicare FFS cohort and 1.71 for SEER.

• Despite the differences in the methodology, the SEER database is a well-respected source for epidemiological data, and its estimates are consistent with trends observed in the Medicare FFS data.

• Because only 70% of the ≥65 year-old population is covered by Medicare FFS, the incidence estimate for the total number of patients ≥65 years may even be higher than those reported here.

• Although SEER is a well-respected source of epidemiological data, claims-based algorithms provide higher AML estimates than current SEER methodology that may be more representative.

• Further research is needed to examine claims data in the ≥65-year-old population covered under Medicare Advantage; in addition, a younger, non-Medicare FFS population sample may be more representative of persons ≥65 years of age.

REFERENCES


DISCLOSURES

• All authors declared no conflicts of interest.

• The authors have no conflicts of interest to disclose.

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